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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/392,019	09/08/1999	DAVID CAHILL	B0630/7020	9463

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EXAMINER

LEE, PING

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/392,019

Applicant(s)

CAHILL, DAVID

Examiner

Ping Lee

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5,7-9,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 7-9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Noro (US 4,969,195).

Regarding claim 1, Noro discloses a thermal overload and resonant motion control circuit (col. 3, lines 55-68) for an audio speaker (3 in Fig. 1) driven by a drive signal from an amplifier (11), where the audio speaker is driven by a drive signal (output from 11) from an amplifier (11), the circuit including: a feedback signal generating (fsg) circuit for generating a feedback signal (from 51 in Fig. 4), said feedback signal being an absolute difference (Fig. 4 shows the absolute difference between the absolute  $e_o$  and the absolute  $e_s$ ) between a proportion of a drive voltage and a proportion of a drive current (in Fig. 4, element 51 generates the difference); and an attenuator (52, 6, 13) operable in response to said feedback signal (from 51) for controlling said drive signal (output from 11), wherein said feedback signal (from 51) is given by  $f(a_i, b_v)$ , where  $i$  and  $v$  are drive currents (the drive current is detected by  $Z_s$  because the drive current is equal to the voltage divided by the resistance  $Z_s$ ; col. 2, lines 42-43) and drive voltage (the drive voltage is the voltage at the input of 4) respectively for said drive signal

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(output from 11), and where  $a$  and  $b$  (although  $a$  and  $b$  are not explicitly discussed, they are inherently included. " $e_s$ " is a function of  $i$  and " $e_o$ " is a function of  $v$ ) are percentages of  $i$  and  $v$  respectively utilized by said fsg circuit and wherein said attenuator (52, 6, 13) includes a converter (52) which receives said feedback signal and generates a DC output which is a selected function of the received feedback signal (col. 5, lines 8-20), and a variable attenuator component (6, 13) through which one of the input and output of said amplifier is applied, said DC output (from 52) being applied to control (as shown in Fig. 6) the level of said variable attenuator component (6, 13) wherein said drive signal (from 11) is related to motion of said driver (the motion of the driver affects the impedance; col. 1, lines 16-40; as discussed on col. 2, lines 67-68, the impedance alters the drive current) and said drive current (as discussed on col. 2, lines 40-43, the feedback control is determined by the sensed drive current through  $R_s$ ).

Regarding claim 3, Noro shows that said feedback signal (from 51) is proportional to the absolute value of  $K$  ( $bv - ai$ ) where  $K$  ( $K = 1$  in Noro) is a gain in said fsg circuit (51).

Regarding claim 4, Noro shows in Fig. 8 that  $a$  is equal to  $b$ .

Regarding claim 7, Noro shows the sense resistor ( $Z_s$ ) and a component (5s).

Regarding claim 8, Noro shows the first differential amplifier, the second differential amplifier and a third differential amplifier (Fig. 8).

Regarding claim 9, Noro shows the low pass filter (the parallel  $2R$  and  $C$  before  $R_o$  in Fig. 8)

Regarding claim 11, Noro shows the average.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Shiono et al (US 5,734,987).

Regarding claim 5, Noro fails to show a lowpass filter included in the fsg circuit. In fact, Noro fails to explicitly show the detail of the detection circuits (5s and 5o). However, one skilled in the art would have expected any well known detection circuit could be used for measuring the level without generating any unexpected result. Shiono et al (hereafter Shiono) teaches such a well known level detector (59a,59b in Fig. 12) including a lowpass filter. Thus, it would have been obvious to one of ordinary skill in the art to modify Noro by incorporating the level detector as taught in Shiono because it was considered as a matter of design choice to select any well known level detector.

Since Noro's system is a linear system, the output of the fsg circuit using the level detector as taught in Shiono would have claimed function.

### ***Response to Arguments***

5. Applicant's arguments filed 8/1/05 have been fully considered but they are not persuasive.

Applicant argued that Noro fails to show the claimed absolute difference and the claimed variable attenuator component.

As shown in Fig. 4, Noro shows the absolute drive voltage is compared with the absolute drive current, and the result is the absolute difference. Noro shows in Fig. 1 or 6, a variable attenuator component (13, 6) receives one of the input and output of the amplifier. Therefore, Noro discloses the claimed invention.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Noro suggests to use any well known detection circuit for measuring the absolute value of the drive current and drive voltage since it fails to provide any detail of the detection circuit as shown in Fig. 4. Shiono teaches such a well known detection circuit. Therefore, it would have been obvious to modify Noro in view of Shiono in order to measure the absolute value of the drive current and drive voltage.

***Allowable Subject Matter***

6. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

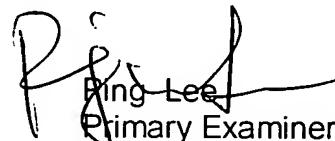
7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ping Lee  
Primary Examiner  
Art Unit 2644

pwl